

## Analog inclinometers for 12-V on-board power systems

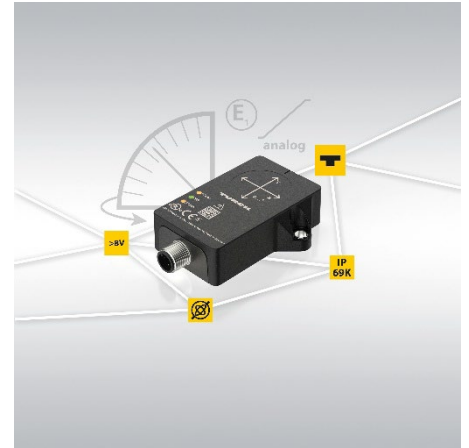
TURCK's QR20 sensors operate at a supply voltage of 8 V DC or higher, measure dynamically using sensor fusion, and can withstand 200 g of shock

Mülheim, September 10, 2026 – TURCK is expanding its QR20 series of inclinometers to include analog versions with mobile equipment capabilities. The sensors operate with a supply voltage as low as 8 V DC and meet automotive EMC requirements. As a result, they deliver specification-compliant inclination values in 12-V vehicle electrical systems of mobile work machines. The dynamic versions fuse MEMS accelerometer and gyroscope signals and output the angle quickly and precisely even under vibration, shock, and disruptive acceleration. Static versions measure based solely on acceleration. TURCK offers both measurement principles in 1-axis versions with a 360° measurement range and 2-axis versions with a  $\pm 85^\circ$  range.

The QR20 housing withstands shocks up to 200 g and operates between -40 and +85 °C. It features a translucent design, allowing the displays to operate without LED lenses and eliminating a potential entry point for moisture. The sensors meet protection ratings IP66, IP67, IP68, and IP69K. For particularly harsh applications, the GUARD-QR20 protective housing is available as an accessory. Electrically, the devices are specified for 100 V/m of immunity to interference per ISO 11452-2 and 200 mA per ISO 11452-4. They withstand conducted disturbances per ISO 7637-2 Level 4 as well as load-dump events per ISO 16750-2 and carry E1 type approval.

Users select the output type via IODD parameterization in the TURCK Automation Suite (TAS): 4 to 20 mA, 0 to 20 mA, 0.1 to 4.9 V, 0 to 5 V, 0.5 to 4.5 V, or 0 to 10 V. The measurement range, filter, and center point can also be set for each axis, either by entering the angle in degrees or by adopting the current angular position. Without software, the Easy Teach function can be activated by connecting a jumper between pin 5 and pin 1; the patented spirit level function displays the alignment directly on the device.

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TURCK's QR20 analog inclinometers use sensor fusion for dynamic measurement and operate in mobile vehicle electrical systems starting at 8 V DC

### FURTHER INFORMATION

<https://www.turck.com/de/en/spotlight/product-news/analog-inclinometers-for-12-v-on-board-power-systems>

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